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AUTHOR	Cooney, Sondra
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ABSTRACT

In spring 2000, the Southern Regional Education Board, through its Middle Grades Assessment, gathered information from 5,000 eighth-graders and 1,800 middle-grades teachers in 60 schools in 14 states. This brief report describes what that information revealed: a significant difference between the achievement scores of the highest performing 25 percent of students and the lowest performing 25 percent of students. These gaps were true for both white and African American students, and they existed in all three subjects assessed: reading, mathematics, and science. Smaller gaps also existed between white and African American students in both the highest performing and the lowest performing 25 percent of students. The report discusses possible reasons for these gaps based on an analysis of responses to questions from teachers and students about their schools and classrooms. The report also discusses other gaps that affect student learning and achievement: the varying quality of leadership, parents' and teachers' expectations of students, academic guidance, and teaching practices. The report concludes with recommendations on what schools, districts, and states can do to close these gaps in the middle grades. (WFA)

Closing Gaps in the Middle Grades.

Sondra Cooney

September 2001

SREB

Closing Gaps in the Middle Grades

Southern
Regional
Education
Board

592 10th St. N.W.
Atlanta, GA 30318
(404) 875-9211
www.sreb.org

This report was prepared by Sondra Cooney, SREB director for Making Middle Grades Matter.

Closing Gaps in the Middle Grades

What do all middle grades schools have in common? They all face the challenge of changing what they teach, when they teach it and how they teach it in order to narrow the gap in student achievement.

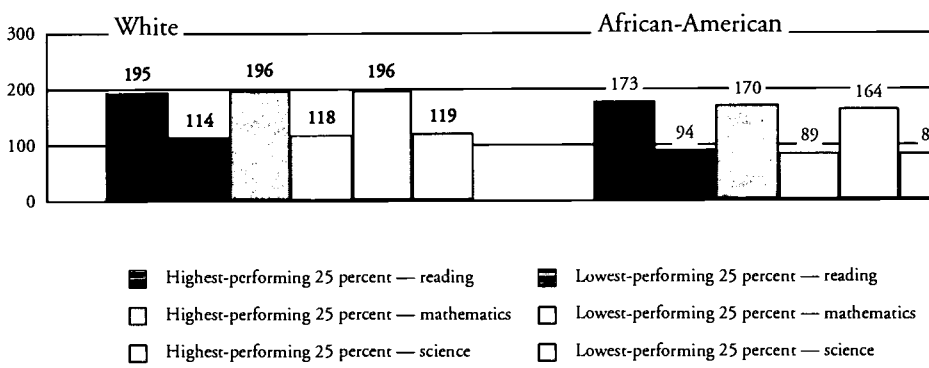
The highest-performing 25 percent of students have access to some of the world's finest free educational opportunities. However, the lowest-performing 25 percent of students toil with worksheets and textbooks that don't challenge them or inspire them to work harder in school.

What is different about the leadership and school climate in schools with high-performing students? What is different about students' school and classroom experiences? What can we learn from high-performing schools and students about improving middle grades education? How can schools begin to close gaps that prevent students from entering ninth grade ready to succeed in high school? The Southern Regional Education Board works with middle grades schools to make sure that students leave eighth grade ready for the rigorous courses in high school that they will need to be successful after high school.

In spring 2000, the Southern Regional Education Board, through its Middle Grades Assessment, gathered information from 5,000 eighth-graders and 1,800 middle grades teachers in 60 schools in 14 states. There was a significant difference between the achievement scores of the highest-performing 25 percent of students and the lowest-performing 25 percent of students. These gaps were true for both white and African-American students, and they existed in every subject assessed (reading, mathematics and science). Smaller gaps also existed between African-American students and white students in both the highest-performing and the lowest-performing 25 percent of students.

Figure 1

Mean Scores on the SREB Middle Grades Assessment by Racial/Ethnic Group*



* Other racial/ethnic groups accounted for less than 5 percent of the students assessed.

To uncover possible reasons for these gaps, SREB analyzed teachers' and students' responses to questions about their schools and classrooms. Student and teacher perceptions indicate that other gaps — the varying quality of leadership, expectations, guidance and teaching practices — affect student learning and achievement.

The leadership and climate at high-performing schools and low-performing schools ... how are they different?

A LEADERSHIP GAP

Slightly more than half of teachers in the highest-performing schools — but only about one-third of the teachers in the lowest-performing schools — say that their schools' goals and priorities are clear.

Leaders in these high-performing schools are more likely to encourage teachers to teach more rigorous content and to maintain a demanding yet supportive environment that pushes students to do their best.

Table 1

Teacher Perceptions of Policies and Procedures in Their Schools

Statement	Percent of teachers who agree with statement	
	At high-performing sites	At low-performing sites
Goals and priorities are clear.	52%	37%
The principal consults with staff members before making decisions that affect us.	38	21
In this school, I am encouraged to experiment with my teaching.	49	33
I am encouraged to revise my curriculum so that I teach more rigorous content in my subject(s) to students.	33	24
Teachers and school administrators work together to improve the achievement of students in this school.	55	27
Teachers in this school maintain a demanding yet supportive environment that pushes students to do their best.	41	29
The success or failure of students is due largely to factors beyond my control.	49	64

There also are differences in how teachers view their relationships with administrators and colleagues. Teachers in high-performing schools are more likely to report that principals consult with them before making decisions that affect teaching and learning. These teachers also are more likely to say that teachers and administrators work together to improve student achievement and that teachers are encouraged to experiment with teaching practices that engage more students in learning.

An expectations gap

Low expectations are a major deterrent to improving achievement; they undermine the importance of student effort and quality learning experiences. Low expectations are based on the assumption that race, poverty and family educational levels prevent schools from helping many students excel.

Students' success or failure is due largely to factors over which teachers have no control, say almost two-thirds of the teachers in the lowest-performing schools. Even in the highest-performing schools, nearly half of the teachers say student performance depends largely on factors outside the classroom.

This belief held by middle grades teachers is reinforced by national and state data that show strong relationships between student achievement and poverty. Poverty and family situations become handy excuses for why students do not learn.

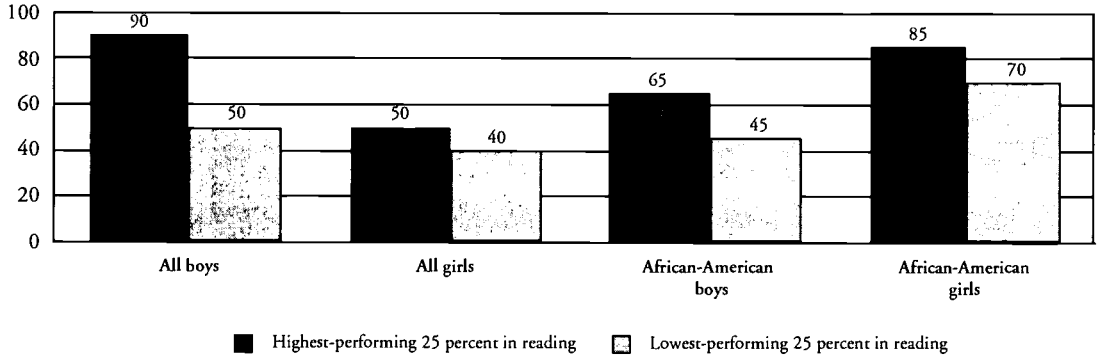
District and school leaders can change the climate for learning by examining what successful schools do. Successful leaders listen to what students and teachers say about their schools, and they raise expectations. These leaders understand how effective instructional practices and deeper knowledge of content can improve student achievement.

Schools with higher expectations and greater success are more likely to have school leaders who:

- establish clear goals and priorities for higher academic achievement;
- encourage teachers to work with them on curricular and instructional issues;
- encourage teachers to experiment with and improve their teaching practices;
- consult staff about decisions that affect teaching and learning;
- encourage teachers to teach more rigorous content linked to performance standards;
- provide opportunities for students to meet with counselors, teacher-advisers and parents to discuss their educational and career plans; and
- maintain a demanding yet supportive environment that helps all students achieve higher standards by providing more time and more help to those who need them.

Figure 2

Percent of Students Who Discussed High School Studies With Counselors



A GUIDANCE GAP

High-performing students are much more likely to report that they talked with counselors several times about which classes to take when they get to high school. High-performing students also are much more likely to report that they intend to complete college.

In all racial/ethnic groups, the low-performing students who need the most help in developing educational goals are the least likely to have received such help.

In many middle grades schools, counselors have too little time and too many students — with too many serious problems — to reach out to students through a traditional guidance program. Schools that use teachers as advisers and mentors to students can make sure that students and parents receive timely information about careers and college-preparatory programs in high school. Students who have teacher-mentors are more likely to have educational goals and educational plans for high school and beyond.

A TEACHING PRACTICES GAP

To overcome teachers' belief that they do not control the factors that contribute to student success, the responses from different groups of students about classroom experiences were compared with their achievement in reading, mathematics and science on the 2000 SREB Middle Grades Assessment.

SREB analyzed teaching practices using a statistical model that controlled for the effects of poverty, race and gender. Four teaching practices were found to be linked with higher student achievement in all three subjects (reading, science and mathematics). The more often these practices occurred in classrooms, the higher students' scores were on the assessment in all three subject areas. Teachers can and do control these practices.

Table 2

Student Perceptions of Teaching Practices in Their Schools

Teaching practice	Percent of students who said practice took place "often"							
	White*		African-American		Male		Female	
	Highest 25 percent	Lowest 25 percent	Highest 25 percent	Lowest 25 percent	Highest 25 percent	Lowest 25 percent	Highest 25 percent	Lowest 25 percent
Teachers indicate the amount and quality of work needed to earn an A or B.	63%	38%	66%	38%	57%	34%	68%	40%
Teachers encourage me to do well in school.	74	61	71	64	69	57	77	65
My teachers know their subjects and can make them interesting and useful.	43	31	36	33	40	32	42	34
My teachers set high standards and are willing to help me meet them.	55	43	52	45	49	39	57	48

* Other racial/ethnic groups accounted for less than 5 percent of the students assessed.

1. Two-thirds of high-performing students reported that their teachers indicated the amount and quality of work needed to earn an A or B on an assignment; about one-third of low-performing students said their teachers provided such guidelines. Teachers who provide specific guidelines for assignments and examples of quality work translate content standards into concrete performance standards for students.

2. Almost three-fourths of high-performing students reported that their teachers encouraged them to do well in school. Significantly fewer low-performing students said they were encouraged to put forth their best effort.

3. Most high-performing students reported that teachers set high standards for them and helped them to meet these standards. Significantly fewer low-performing students said they were expected and helped to meet high standards; their classes were less likely to emphasize high-quality work and have explicit performance guidelines.

4. In no group of students did a majority report that their teachers knew their subjects well and made them interesting and useful. In one interview during a school visit, a student described teachers who knew their subjects as "always asking about the 'hows' and 'whys.' They ask us to compare and contrast, and they challenge us to think."

In science, students scored higher when they completed written reports on laboratory experiences at least once a week and when they worked with other students in cooperative groups at least once a week. In addition, boys who reported reading an assigned book or article on a science topic at least once a week scored higher on the assessment than did those who did not report such assignments or who were assigned those tasks less frequently. For girls, completing a written lab report at least once a week was the strongest predictor of higher scores in science.

Factors that predicted higher scores in mathematics for all students were:

- solving mathematics problems from textbooks daily;
- working with partners or small groups to solve mathematics problems at least once a week;
- using scientific calculators in mathematics classes at least once a week; and
- using mathematics skills to solve problems in other classes at least once a week.

In addition, explaining how to solve mathematics problems to others in the class predicted higher mathematics scores for boys.

Seventy-six percent of high-performing students indicated that they had had at least a semester of algebra in the middle grades; 41 percent of students in the lowest quartile reported taking at least a semester of algebra. Student reporting of course content and learning may not be entirely accurate, but students who believe they are studying some-thing called "algebra" have higher test scores. Comments by students in interviews during school visits indicate that they feel a sense of accomplishment when "I do something hard like algebra."

Teachers control all of these experiences and teaching practices, which improve student achievement and help overcome the negative effects of poverty and other conditions beyond teachers' and students' control.

Schools and districts can use these experiences and teaching practices to change the climate for learning and the beliefs about who can learn and how subjects should be taught.

Middle grades schools should look at what teachers, students and test scores say about the performance of the whole school and of groups within the school. If there are differences among groups, the next step is to examine the curriculum and the instructional practices that affect each group of students.

- Do all students know the amount and quality of work needed to earn an A or B before they begin work on an assignment?
- Are all students encouraged to do well — to make their best effort — in school?
- Do all students have regular opportunities to work together and to learn from one another?

- Do all students have teachers who know their subjects well, make them interesting and useful, and demonstrate a passion for teaching and joy of learning?
- Do all students know that they are expected to meet high standards and that they will get extra time and help (if needed) to meet those standards?
- Do all teachers know the teaching practices that can close achievement gaps?

A Well-Developed Action Plan

Muscle Shoals Middle School in Alabama looked at students' scores on the state writing assessment as an opportunity to make some changes. Fifth-grade scores were low, but seventh-grade scores were even worse. Classes did not emphasize writing — except in grades five and seven, when students were assessed.

With the help of the assistant superintendent, the school formed a task force to examine the curriculum and teaching practices for grades three through eight. The task force met five times over the summer in daylong meetings to develop common editing procedures and grading practices and to plan professional development that would help teachers select the appropriate materials and instructional practices for different types of writing.

In semimonthly meetings after school, teachers developed writing notebooks that contained examples of writing topics, of papers for students to examine and score, and of papers that met state writing standards to share with parents. Teachers also collected writing samples that resulted from their instruction, and they worked together on learning to score the same way that the experts who score the state assessment do. All students now write once a week in every class, and teachers often are asked, "Can I write this over to make it better?"

Several practices have resulted directly from teachers' dissatisfaction with students' writing:

- All teachers provide students with scoring guidelines for every writing assignment.
- All teachers use the same editing symbols and practices.
- All teachers use teacher/student editing conferences as well as peer editing groups.
- All teachers have various teaching strategies to suit different writing tasks and to meet the needs of all students.

Do these activities close achievement gaps? In one year, the percentage of students who scored at the proficient and advanced levels on the state writing assessment rose from 25 percent to 88 percent.

If the answer to any of these questions is "no," a middle school needs to develop an action plan to address achievement gaps. A well-developed action plan — based on teaching practices and specific instructional strategies that can improve student performance — will begin to close gaps and raise student achievement.

How can all schools begin to close the gaps in middle grades education?

Comprehensive reform of middle grades education is based on making a series of changes involving curriculum; teaching strategies; expectations of students; school organization; teachers' relationships with students, parents and one another; school goals and priorities; uses of data; preparation, selection and support of teachers; and support from school leaders for higher expectations and more challenging content and assignments.

Collecting data related to a series of benchmark indicators helps school leaders and teachers understand how changes affect student achievement. Continuous collection of such data can keep schools moving toward targeted goals on student achievement and school and classroom practices. For example, schools can measure their progress on teaching practices that are significant factors in raising student achievement.

School leaders can make sure that teachers translate state and school standards into classroom assignments and grading criteria. These criteria should spell out specifically what students must do to earn A's or B's. For teachers to make progress in this area, school leaders need to give them time to work together, develop challenging assignments and critique students' work. School and faculty leaders should plan and assess professional-development activities that will help teachers deepen their content knowledge and make content useful and relevant to young adolescents.

To create a sense of urgency for measuring progress, district and school leaders must create a sense of dissatisfaction with the status quo. Researchers at the University of Wisconsin studied schools that were implementing change and found that the pace and amount of change increased as the sense of dissatisfaction increased. Dissatisfaction alone is not enough; successful leaders provide ideas about what changes will help the school improve. One powerful catalyst for change is the evidence from similar schools that already have improved the practices that are significant to student achievement in the middle grades.

What can states and districts do to begin closing the gaps in middle grades?

> *"We need to re-educate our teachers, and we need a massive professional-development effort. Teachers want to be good at what they do; they want to be good teachers."*
>
> — Marilyn Whirry, National Teacher of the Year, 2000

Teachers across SREB's network of middle grades schools are asking for better and more opportunities for professional growth. An effective professional-development experience is planned carefully, includes an in-depth experience, and has frequent and systematic follow-up activities. SREB's analysis of the 1996 NAEP data on mathematics and science from throughout the region found that, in order to affect student achievement, more than 16 hours annually of professional development in a content area is needed.

Just 5 percent to 7 percent of teachers (depending on content area) who completed the survey as part of the Middle Grades Assessment had more than 16 hours annually of intensive professional development in a content area with regular and systematic follow-up.

Only 11 percent reported that a great deal of their staff development was sustained over time with ample follow-up activities, such as observation of their teaching by an expert, who then offered advice and ideas on retooling instruction to improve student achievement.

Professional development that is planned jointly by school leaders and faculty and that is based on teachers' and students' needs will make a difference in student achievement. For example, professional development in getting at-risk students to master complex content should be built around upgrading teachers' content knowledge. It also should provide examples and allow teachers to practice teaching strategies — such as organizing cooperative learning groups and getting students to read materials in addition to the textbook — that are linked to higher student achievement.

Several SREB states are leaders in planning and delivering more effective professional development for middle grades teachers. The South Carolina State Department of Education — in cooperation with the South Carolina Middle School Association — provides summer institutes in language arts, mathematics, science and technology. These weeklong institutes provide graduate credit and 45 hours of intensive learning. The Governor's Institute of Reading at the State Department of Education sponsors a seven-part series of seminars for middle grades teachers on the teaching of reading and writing. Each seminar lasts six hours and provides time for new learning and for sharing examples of how previous learning was applied in classrooms.

The Kentucky Department of Education — in collaboration with the state's universities — has developed mathematics, science, social studies and reading institutes for middle grades teachers. West Virginia provides middle grades teachers with comprehensive and intensive professional development in mathematics. Georgia has developed a reading curriculum and a course in teaching reading that all middle grades teachers will be required to complete for recertification. Maryland has focused professional-growth opportunities for middle grades teachers on reading development. State actions to support higher achievement in the middle grades include defining a quality curriculum in the middle grades and building transition policies that help students move successfully from the middle grades to high school.

Planning for continuous improvement

A program or fad here or there will not lead to long-term, sustained improvement in student achievement. Educational inertia exists partly because the middle grades lack visibility on policy-makers' agendas. States that are the most active in adding schools to SREB's middle grades network are the states that have established task forces or commissions to study issues in the middle grades, have conducted forums on improving middle grades education statewide and have designated staff to unite middle grades educators and discuss leadership issues. To overcome inertia, state commissioners of education, state boards of education, legislators and governors must focus on the needs of middle grades education.

The data from SREB's Middle Grades Assessment and school visits show some actions that can help all students meet higher standards and prepare for the future. There always will be gaps between the achievement of the highest- and lowest-performing students. Even so, these gaps can be reduced — and the gaps among groups of students can be closed — if states and schools take certain actions:

- Schools need to expect all students to enter ninth grade ready to succeed in college-preparatory academic courses.
- Schools need to teach the content to all students that the top 25 percent of students in the middle grades currently receive.
- School leaders and teachers need to use proven instructional practices that engage students in learning more complex content.
- States need to set policies that ensure that professional-development opportunities for school leaders and teachers result in a deeper understanding of content and effective teaching practices.
- States need to develop middle grades leaders who understand curriculum, instruction and how young adolescents learn — and who can communicate and lead schools through changes that promote learning and raise student achievement.

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